IN THE CLAIMS

Please replace the claims as filed with the claims set forth below. This listing of claims will replace all prior versions, and listings, of claims in the application:

1-65. Canceled.

66. (Currently amended) A composition of [[a]] nanocapsules comprising:

(a) a surfactant micelle comprising a core provided by a bioactive component; and a surfactant having an HLB value of less than about 6.0 units, wherein said bioactive component has a therapeutic effect; and

(b) a shell surrounding the surfactant micelle, said shell comprising a precipitate comprising a polypeptide and a cationic precipitating agent, wherein the polypeptide provides specific cellular uptake by binding to a cell surface antigen or cell surface receptor,

subject to the limitation that the nanocapsules have an average diameter of less than about 50 nanometers as measured by atomic force microscopy following drying of the particles.

67. (Previously Presented) The composition of claim 66 wherein the bioactive component comprises a polynucleotide.

68. (Withdrawn) The composition claim 66 wherein the bioactive component comprises a hydrophilic component.

69. (Withdrawn) The composition claim 66 wherein the bioactive component comprises a hydrophobic component.

70. (Withdrawn) The composition of claim 67 wherein the macromolecule is a member of the group consisting of peptides, proteins, and carbohydrates.

71. (Withdrawn) The composition of claim 67 wherein the macromolecule comprises a polynucleic acid, oligonucleotide, antisense molecule, peptide nucleic acid, or oligopeptide.

72. (Withdrawn) The composition of claim 71 where the polynucleotideic acid is an RNA or DNA sequence of more than 1 nucleotide in either single chain, duplex or multiple chain form, or modified forms thereof.

73. (Withdrawn) The composition of claim 67 wherein the macromolecule comprises a member of the group consisting of antigens isolated from pathogens, viral antigens, fungal antigens, parasitic antigens, and inactivated pathogenic organisms.

74. (Withdrawn) The composition of claim 66 wherein the bioactive component is a small molecule.

75. (Withdrawn) The composition of claim 74 wherein the small molecule is a chemotherapeutic agent.

76. (Withdrawn) The composition of claim 66 wherein the bioactive component is a detection agent.

77. (Withdrawn) The composition of claim 76 wherein the detection agent is a fluorescent molecule.

78. (Withdrawn) The composition of claim 66 wherein the bioactive component is an inorganic agent.

79. (Withdrawn) The composition of claim 67 wherein the macromolecule is a member of the group consisting of aptamers, mini-chromosomes, steroids, adrenergic, adrenocortical steroid, adrenocortical suppressant, aldosterone antagonist, and anabolic agents; analeptic, analgesic, anesthetic, anorectic, anti-acne agents; anti-adrenergic, anti-allergic, anti-amebic, anti-anemic, and anti-anginal agents; anti-arthritic, anti-asthmatic, anti-atherosclerotic, antibacterial, and anticholinergic agents; anticoagulant, anticonvulsant, antidepressant,

antidiabetic, and antidiarrheal agents; antidiuretic, anti-emetic, anti-epileptic, antifibrinolytic, and antifungal agent; antigens, antihemorrhagic, anti-inflammatory, antimicrobial, antimigraine, and antimiotic agents; antimycotic, antinauseant, antineoplastic, antineutropenic, and antiparasitic agents; antiproliferative, antipsychotic, antirheumatic, antiseborrheic, and antisecretory agents; antispasmodic, antithrombotic, anti-ulcerative, antiviral and appetite suppressant agents.

80. (Withdrawn) The composition of claims 67 wherein the macromolecule is a member of the group consisting of blood glucose regulator, bone resorption inhibitor, bronchodilator, cardiovascular, and cholinergic agents; fluorescent, free oxygen radical scavenger, gastrointestinal motility effector, glucocorticoid, and hair growth stimulant agent; hemostatic, histamine H_2 receptor antagonists; hormone; hypocholesterolemic, and hypoglycemic agents; hypolipidemic, hypotensive, and imaging agents, immunizing and agonist agents; mood regulators, mucolytic, mydriatic, nasal decongestant; neuromuscular blocking agents; neuroprotective, NMDA antagonist, non-hormonal sterol derivative, plasminogen activator, and platelet activating factor antagonist agent.

81. (Withdrawn) The composition of claim 67 wherein the macromolecule is a member of the group consisting of platelet aggregation inhibitor, psychotropic, radioactive, scabicide, and sclerosing agents; sedative, sedative-hypnotic, selective adenosine A1 antagonist, serotonin antagonist, and serotonin inhibitor agent; serotonin receptor antagonist, steroid, thyroid hormone, thyroid hormone, thyroid inhibitor agent; thyromimetic, tranquilizer, amyotrophic lateral sclerosis, cerebral ischemia, Pagel's disease agent; unstable angina, vasoconstrictor, vasodilator, wound healing, xanthine oxidase inhibitor agent; and immunological agents.

82. (Withdrawn) The composition of claim 66 wherein the bioactive component is a combination of two or more bioactive components.

83. (Withdrawn) The composition of claim 66 wherein at least one biocompatible polymer of said shell comprises a ligand.

84. (Withdrawn) the composition of claim 66 wherein at least one biocompatible polymer of said shell comprises a peptide hormone, antibody, tenascin, hyaluronan, or polyvinylpyrrolidone.

85. (Withdrawn) The composition of claim 66 wherein at least one biocompatible polymer of said shell comprises a ligand that targets a receptor for tenascin, hyaluronan or polyvinylpyrrolidone, an antigen, a cell surface receptor involved in receptor mediated endocytosis, a growth factor receptor, a cell adhesion molecule or an integrin.

86. (Withdrawn) The composition of claim 66 wherein at least one biocompatible polymer of said shell comprises a ligand that targets a receptor for tenascin.

87. (Previously Presented) The composition of claim 66 wherein the surfactant is a non-ionic surfactant.

88. (Previously Presented) The composition of claim 66 wherein the surfactant has an HLB value of less than about 5.0 units.

89. (Previously Presented) The composition of claim 66 wherein the surfactant has a critical micelle concentration of less than about 200 micromolar.

90. (Previously Presented) The composition of claim 66 wherein the surfactant is selected from the group consisting of cetyl alcohol, 2, 4, 7, 9-tetramethyl-5-decyn-4, 7-diol, molecules containing an acetylenic diol portion, and blends of 2, 4, 7, 9-tetramethyl-5-decyn-4, 7-diol.

91. (Previously Presented) The composition of claim 66 wherein the surfactant is a combination of two or more surfactants.

92. (Previously Presented) The composition of claim 66 further comprising a biocompatible oil or combination of two or more biocompatible oils.

93. (Previously Presented) The composition of claim 66 further comprising a water-miscible solvent or a combination of water-miscible solvents.

94. (Previously presented) The composition of claim 66, wherein the cation is selected from the group consisting of Ni^{2+}, Mn^{2+}, Ca^{2+}, Al^{3+}, Be^{2+}, Li^{+}, Ba^{2+}, and Gd^{3+}, and combinations thereof.

95. (Withdrawn) The composition of claim 66 wherein said at least one biocompatible polymer is an iontophoretic polymer.

96. Canceled.

97. (Withdrawn) The composition of claim 66 wherein said at least one biocompatible polymer is a hydrophilic polymer that is capable of substantially coating the association of the bioactive component and the surfactant molecules.

98. (Withdrawn) The composition of claim 66 wherein said at least one biocompatible polymer is chosen from the group consisting of polyamide, polycarbonates, polyalkylenes, polyalkylene glycols, polyalkylene oxides, polyalkylene terepthalates, polyvinyl alcohols, polyvinyl ethers, polyvinyl esters, polyvinyl halides, polyvinylpyrrolidone, polyglycolides, polysiloxanes, polyurethanes and copolymers thereof, alkyl cellulose, hydroxybutyl celluloses, cellulose ethers, cellulose esters, nitro celluloses, polymers of acrylic and methacrylic esters, methyl cellulose, ethyl cellulose, hydroxypropyl cellulose, hydroxyl-propyl methyl cellulose, hydroxybutyl methyl cellulose, cellulose acetate, cellulose propionate, cellulose acetate butyrate, cellulose acetate phthalate, carboxylethyl cellulose, cellulose triacetate, and cellulose sulphate sodium salt.

99. (Withdrawn) The composition of claim 66 wherein said at least one biocompatible polymer is chosen from the group consisting of poly(methyl methacrylate), poly(ethylmethacrylate), poly(butylmethacrylate), poly(isobutylmethacrylate),

poly(hexylmethacrylate), poly(isodecylmethacrylate), poly(lauryl methacrylate), poly phenyl methacrylate), poly(methyl acrylate), poly (isopropyl acrylate), poly isobutyl acrylate), poly(octadecyl acrylate), polyethylene, polypropylene, poly(ethylene glycol), poly(ethylene oxide), and poly(ethylene terephthalate).

100. (Withdrawn) The composition of claim 66 wherein said at least one biocompatible polymer is chosen from the group consisting of poly(vinyl alcohols), poly(vinyl acetate), poly vinyl chloride, polystyrene, polyvinylpryrrolidone, polyhyaluronic acids, casein, gelatin, glutin, polyanhydrides, polyacrylic acid, alginate, chitosan, poly(methyl methacrylates), poly(ethyl methacrylates), poly(butylmethacrylate), poly(isobutylmethacrylate), poly(hexylmethacrylate), poly(isodecyl methacrylate), poly(lauryl methacrylate), poly(phenyl methacrylate), poly(methyl acrylate), poly(isopropyl acrylate), poly(isobutyl acrylate) and poly(octadecl acrylate).

101. (canceled)

102. (Withdrawn) The composition of claim 66 wherein said at least one biocompatible polymer has functional groups for chemical reaction on application of light, ultrasonic energy, radiation, a change in temperature, pH, osmolarity or solute or solvent concentration.

103. (Withdrawn) A method of delivering a bioactive component to a target cell, the method comprising exposing a cell to the composition of claim 66 that binds to a targeted receptor.

104. (Withdrawn) The method of claim 103 wherein the cell is a cancer cell or an antigen presenting cell.

105. (Withdrawn) A method of delivering a bioactive component to a cell having caveolae, the method comprising exposing a cell to the composition of claim 66 that binds to a

targeted receptor, wherein the composition is internalized via caveolae-mediated uptake for delivery of the bioactive component.

106. (Withdrawn) The method of claim 105 wherein the cell is a cancer cell or an antigen presenting cell.

107. (Withdrawn) The composition of claim 66, wherein the plurality of particles is associated with the cell.

108. (Withdrawn) A method of transforming a cell, the method comprising exposing the cell to the composition of claim 66.

109. (Withdrawn) A method of delivering a bioactive component across keratinized barrier epithelia to a cell, the method comprising introducing the composition of claim 66 at a position that is separated from the cell by a keratinized barrier epithelium, wherein at least a portion of the plurality of particles passes through the keratinized barrier epithelium to the cell.

110. Canceled.

111. (Withdrawn) The method of claim 109 wherein the composition of claim 66 is prepared as a medicament, and the medicament is administered to a patient.

112. (Withdrawn) A medicament comprising the composition of claim 66.

113. (Withdrawn) The medicament of claim 112 further comprising a form selected from the group consisting of granules, tablets, pellets, films, oral, intravenous, subcutaneous, intraperitoneal, intrathecal, intramuscular, inhalation, topical, transdermal, suppository, pessary, intra urethral, intraportal, intraocular, transtympanic, intrahepatic, intra-arterial, intrathecal, transmocosal, coatings, buccal, and combinations thereof.

114. (Withdrawn) A method of delivering a medicament to a patient, wherein the composition of claim 112 is administered to the patient by oral, intravenous, subcutaneous, intraperitoneal, intrathecal, intramuscular, inhalation, topical, transdermal, suppository, pessary, intra urethral, intraportal, intraocular, transtympanic, intrahepatic, intra-arterial, intrathecal, transmucosal, coatings, device, pulmonary, or buccal, or combinations thereof.

115. (Withdrawn) A matrix for binding the particles of composition 66, the matrix comprising the particles and a binder.

116. (Withdrawn) A method of forming a particle for caveolae-mediated uptake of bioactive component to a targeted cell, the method comprising: associating the bioactive component with biocompatible polymer providing specific cellular or tissue uptake to form a particle measuring less than about 50 nanometers as measured by atomic force microscopy following drying of the particle for delivery of the bioactive component by caveolae-mediated uptake.

117. Canceled.

118. (Withdrawn) The method of claim 116 further comprising exposing the particle to the cell.

119. (Withdrawn) The method of claim 116 further comprising administering a medicament to a patient, the medicament comprising the association of the bioactive component and the biocompatible targeting component.

120-121. Canceled.

122. (Withdrawn) The method of claim 116 wherein the particle further comprises a surfactant having an HLB value of less than about 6.0 units.

123. (Withdrawn) The method of claim 116 wherein the bioactive component is a combination of bioactive components.

124. (Withdrawn) The method of claim 116 wherein the bioactive component is a combination of bioactive components.

125. Canceled.

126. (Withdrawn) The method of claim 116 wherein the bioactive component comprises a macromolecule.

127. (Withdrawn) The method of claim 116 wherein said biocompatible polymer forms a shell of said particle.

128-132. Canceled.

133. (Previously presented) The composition according to claim 66, wherein the polypeptide comprises tenascin.

134. (Previously presented) A composition according to claim 66, wherein the polypeptide comprises a ligand that targets a receptor for tenascin.

135. (Previously presented) The composition of claim 66, wherein the surfactant is associated with the bioactive component in a monomolecular layer of the surfactant molecules.

136. (Previously presented) The composition of claim 66, wherein the surfactant is selected from the group consisting of 2, 4, 7, 9-tetramethyl-5-decyn-4, 7-diol, molecules containing an acetylenic diol portion, and blends of 2, 4, 7, 9-tetramethyl-5-decyn-4, 7-diol.

137. (Previously presented) The composition of claim 67, wherein the polynucleotide is associated with a nucleic acid condensing agent.

138. (Previously presented) The composition of claim 66, wherein said cation comprises Li^{+}.

139. (Previously presented) A composition of nanocapsules comprising:

(a) a surfactant micelle comprising

(i) a core provided by a bioactive component comprising a polynucleotide in association with a nucleic acid condensing agent, wherein said polynucleotide has a therapeutic effect, and

(ii) a surfactant having an HLB value of less than about 6.0 units, and

(b) a shell surrounding the association of the bioactive component and said surfactant, said shell comprising a precipitate comprising a polypeptide and a cationic precipitating agent comprising Li^{+}, wherein the polypeptide provides specific cellular uptake by binding to a cell surface antigen or cell surface receptor on a tumor cell,

subject to the limitation that the nanocapsules have an average diameter of less than about 50 nanometers as measured by atomic force microscopy following drying of the particles.

140. (Previously presented) The composition according to claim 139, wherein the polypeptide is tenascin.

141. (Previously presented) The composition according to claim 139, wherein the polypeptide comprises a ligand that targets a receptor for tenascin.